Uterine Rupture Due to Traumatic Assisted Fundal Pressure

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SUMMARY

Objective: Uterine rupture is potentially a life-threatening condition for both mother and infant. In this article, we report a rare occurrence of uterine rupture due to traumatic assisted fundal pressure associated with hydrops fetalis and shoulder dystocia.

Case Report: A 29-year-old woman was admitted for termination of pregnancy at 34 weeks' gestation because of fetal hydrops. Assisted uterine fundal pressure was done during delivery because of coexistent shoulder dystocia. After a series of assisted uterine fundal pressure, a dead hydropic baby weighing 4,000 g was delivered, and persistent postpartum hemorrhage occurred. An emergency laparotomy was performed, which revealed a large left broad ligament hematoma with multiple bleeding points. The bleeders were safely sutured and the tears of the left lateral uterine wall were primarily restored. The patient was discharged 8 days later.

Conclusion: Assisted fundal pressure during painful delivery can be traumatic and results in uterine rupture. In this article, we suggest that uterine rupture should be considered whenever a pregnant woman experiences a sudden onset of abdominal pain during the course of assisted uterine fundal pressure. [*Taiwanese J Obstet Gynecol* 2006;45(2):170–172]

Key Words: assisted uterine fundal pressure, uterine rupture

Introduction

Ruptured uterus is a serious obstetric emergency with a high maternal and perinatal mortality. The risk factors for uterine rupture are increased maternal age, postpartum fever after previous cesarean delivery, short interdelivery interval, history of at least two previous cesarean deliveries, and a history of classical incision [1,2]. Among them, dehiscence from previous section scar, especially in the presence of oxytocic stimulation in unrecognized cephalopelvic disproportion, is the most common cause [3]. Uterine rupture due to assisted uterine fundal pressure, however, has rarely been reported. Here, we describe an unusual case associated with traumatic uterine rupture at 34 weeks of gestation in a pregnancy complicated by hydrops fetalis and shoulder dystocia.

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Case Report

A 29-year-old woman, gravida 4, para 2, artificial abortion 1, referred from a local medical department was admitted for oxytocin induction of labor because of hydrops fetalis at 34 weeks. She had experienced normal smooth vaginal deliveries for her first two pregnancies. Her last pregnancy was terminated electively by an uncomplicated dilatation and curettage. On admission, her body temperature was 36.9 °C, pulse rate was 72 beats/minute, and blood pressure was 110/80 mmHg. Cervical examination indicated a 4-cm dilation, intact membranes, 20–30% effacement, and vertex presentation at floating station. Continuous external fetal monitoring was initiated. Cardiotocographic monitoring showed normal fetal heart rate with good

variability and accelerations. Oxytocin was started at 2 mIU/minute and an additional increase of 2 mIU/minute was made at 2 and 3 hours, respectively, into the induction. About 5 hours after induction, tachysystolic uterine contractions, increased resting tonus, and fetal bradycardia were noted. The patient complained of intense abdominal pain during oxytocin infusion at the rate of 6 mIU/minute. At that time, vaginal examination revealed a completely dilated cervix, a +2 to +3 station, and a right occiput anterior position. Fetal bradycardia persisted with maternal tachycardia. The mother was immediately sent to the labor room for a rapid vaginal delivery. Assisted uterine fundal pressure was made during the delivery because of coexistent shoulder dystocia. After a series of assisted uterine fundal pressure, the abdominal pain became excruciating and intolerable. Finally, a dead hydropic baby weighing 4,000 g was delivered by vacuum extraction and McRoberts maneuver. Unfortunately, postpartum hemorrhage occurred. A laceration wound extending from the distal portion of the vagina was found through a manual exploration into the birth canal. Emergency laparotomy was performed, which revealed a large left broad ligament hematoma with multiple bleeding points involving the uterine artery branches. The bleeders were safely sutured and the tears of the left lateral uterine wall were primarily restored. Blood transfusion of 2,500 mL was given. The postoperative course was uneventful. The patient was discharged 8 days later.

Discussion

Uterine rupture is a catastrophic tearing open of the uterus into the abdominal cavity. In the modern era, the incidence of uterine rupture is < 1/1,000 deliveries, the majority of which occur in women with a previous cesarean delivery [4]. Other risk factors for uterine rupture include obstructed labor [5], grand multiparity [6], macrosomic hydrocephalic fetus, previous midtrimester instrumental abortion, trauma, the use of uterotonic drugs to induce or augment labor, placenta percreta [7], and, rarely, intrauterine manipulations such as internal podalic version and breech extraction.

Uterine rupture can occur with the use of oxytocin. This patient's labor was monitored carefully, and hyperstimulation was not seen. Nevertheless, uterine rupture occurred, and the possible causes to be considered are an overzealous attempt at vaginal delivery when faced with shoulder dystocia, the application of vacuum was traumatic, excessive fundal pressure, and manual removal of the placenta. Although the patient had no history of any prior uterine scar, her previous artificial abortion might have been related to the rupture. She might have had an undiagnosed uterine perforation, and the weakened area could have been further stressed by her next delivery and ruptured by the current labor.

The presenting manifestations of uterine rupture include bradycardia alone (100%), bradycardia with fetal distress (82%), abnormal fetal heart rate tracing (33%), failure to progress (21%), pain (13%), and vaginal bleeding (11%). Other noncooperative signs (not reliable and often absent) include sudden tearing uterine pain, vaginal hemorrhage, cessation of uterine contractions, and regression of the fetus [8–13]. Shoulder dystocia related to fetal parts lodging outside the uterus can also be a presenting sign [14].

Timely management of uterine rupture depends on prompt detection; however, the presenting signs of uterine rupture are often nonspecific. Diagnosis is usually made when rupture has already occurred. In women at high risk, any fresh vaginal bleeding should be taken seriously. Visual, manual, or sonographic exploration of the uterus is required to make the diagnosis. In this case, tachycardia, vaginal bleeding, and fetal bradycardia were noted. After excessive assisted uterine fundal pressure, the patient suffered from severe abdominal pain. Persistent traumatic assisted fundal pressure might be taken into consideration as a main factor causing uterine rupture.

Early surgical intervention is usually the key for successful treatment of uterine rupture. Hysterectomy, with accompanying loss of future childbearing potential is required in 6–23% of cases to control maternal hemorrhage [9,15,16]. In this case, successful uterine restoration was made; however, there is the possibility of rupture recurrence in a subsequent pregnancy.

Uterine rupture accounts for approximately 5% of all maternal deaths and 2.6–6% of neonatal mortality each year [17]. Unfortunately, uterine rupture cannot be adequately predicted. To prevent uterine rupture, physicians should review a woman's history for factors associated with higher rupture rates, continuous fetal heart rate monitoring is imperative because this can be the only indication of an impending rupture, and good obstetric and antenatal care is also very important [17].

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